

EP02.32: Ultrasound Morphology and Vascularization in Endometriomas and Ovarian Mature Cystic Teratomas

Žaklina Jurišić¹, Aleksandar Jurišić², Aleksandar Rakić²

¹**OB/GYN Polyclinic Jurišić, Belgrade, Serbia** ²**Obstetrics and Gynecology Clinic Narodni Front, Belgrade, Serbia** ³**School of Medicine, University of Belgrade, Serbia**

Background / Objectives

Endometriomas and mature cystic teratomas (MCTs) are common benign adnexal masses. Comparative ultrasound data remain limited. We aimed to compare morphological and vascular sonographic features of MCTs and endometriomas using transvaginal ultrasound and power Doppler.

Methods

This retrospective study included 93 patients undergoing surgery for benign adnexal masses (Jan 2020–Jan 2022) at Narodni Front Clinic. Morphology (appearance, diameter, volume, capsule thickness) and hemodynamics (vessel number/location, RI, Vmax, Vmin, uterine artery RI [AURI]) were assessed by transvaginal ultrasound and power Doppler.

Key Results

Among 46 MCTs and 46 endometriomas (1 patient had both), morphology differed significantly: MCTs were most often multilocular solid cysts (51.0%) or unilocular solid cysts with hyperechoic content (20.4%); endometriomas were mostly unilocular with ground-glass echogenicity (45.5%).

Doppler Findings

Endometriomas showed higher pericystic vessel RI (0.57 vs 0.54, $p = 0.04$) and lower ipsilateral uterine artery RI/AURI (0.81 vs 0.83, $p = 0.02$) than teratomas. Vessel number and location were similar between groups.

Clinical Relevance

Combining morphology with RI/AURI Doppler indices may improve preoperative discrimination between these masses, supporting more precise surgical planning.

Total vessels analyzed: 168 (endometriomas) vs 149 (teratomas); most were pericystic in both groups ($p = 0.5$).

Conclusion

RI and AURI, combined with morphology, help distinguish endometriomas from mature cystic teratomas. This supports more precise, ultrasound-based diagnosis of these common benign masses.

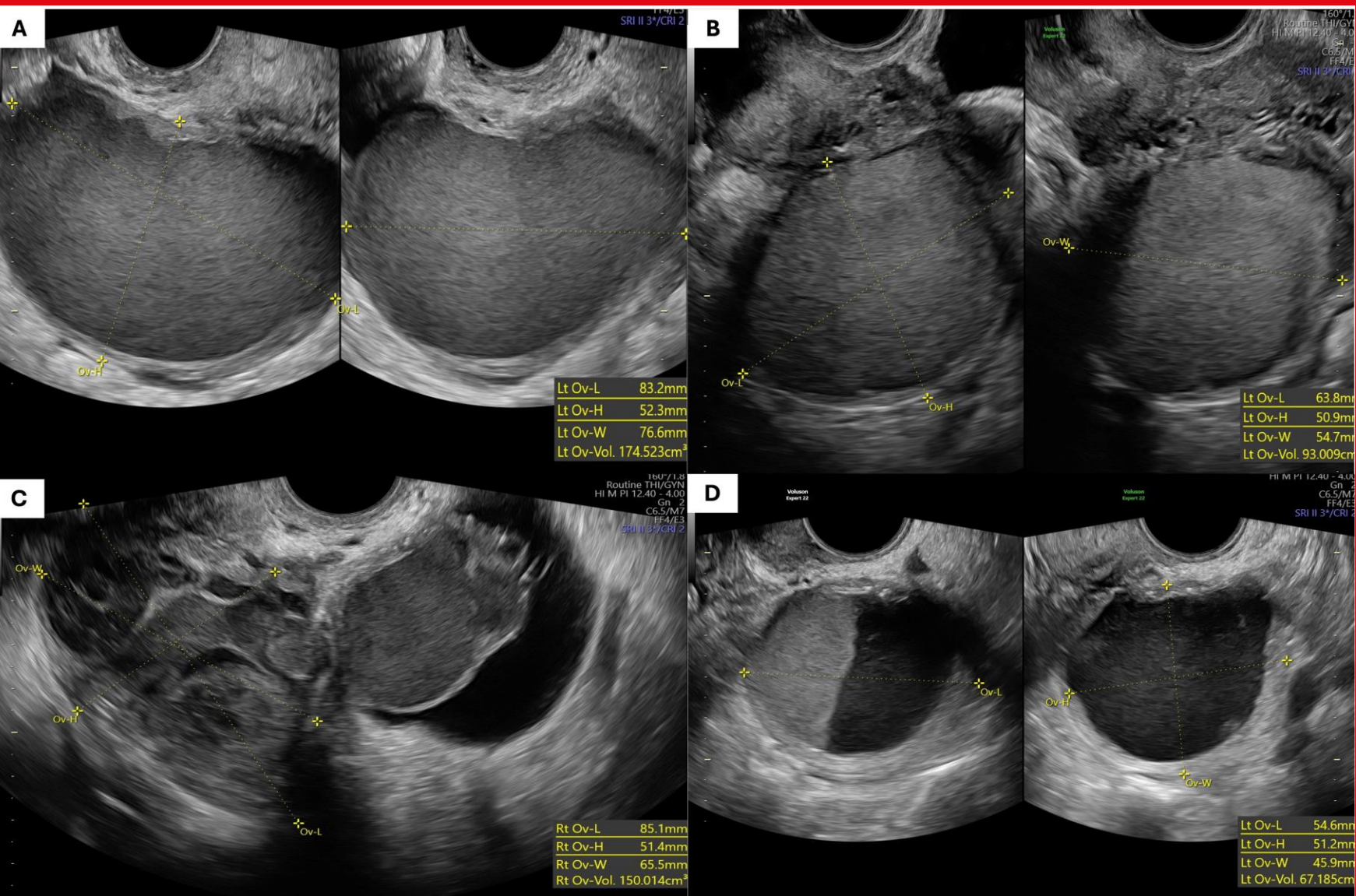


Figure 1. Ultrasonographic appearance of endometriomas.

(a and b) Unilocular cyst with ground-glass echogenicity (arrows indicate characteristic ground-glass echogenic content, asterisks mark the thin cyst wall); (c) Multilocular endometrioma (arrows point to septations, asterisk marks the largest locule with ground-glass echogenicity); (d) Multilocular-solid endometrioma (arrows indicate solid components and septations, asterisk marks cystic component with ground-glass appearance).

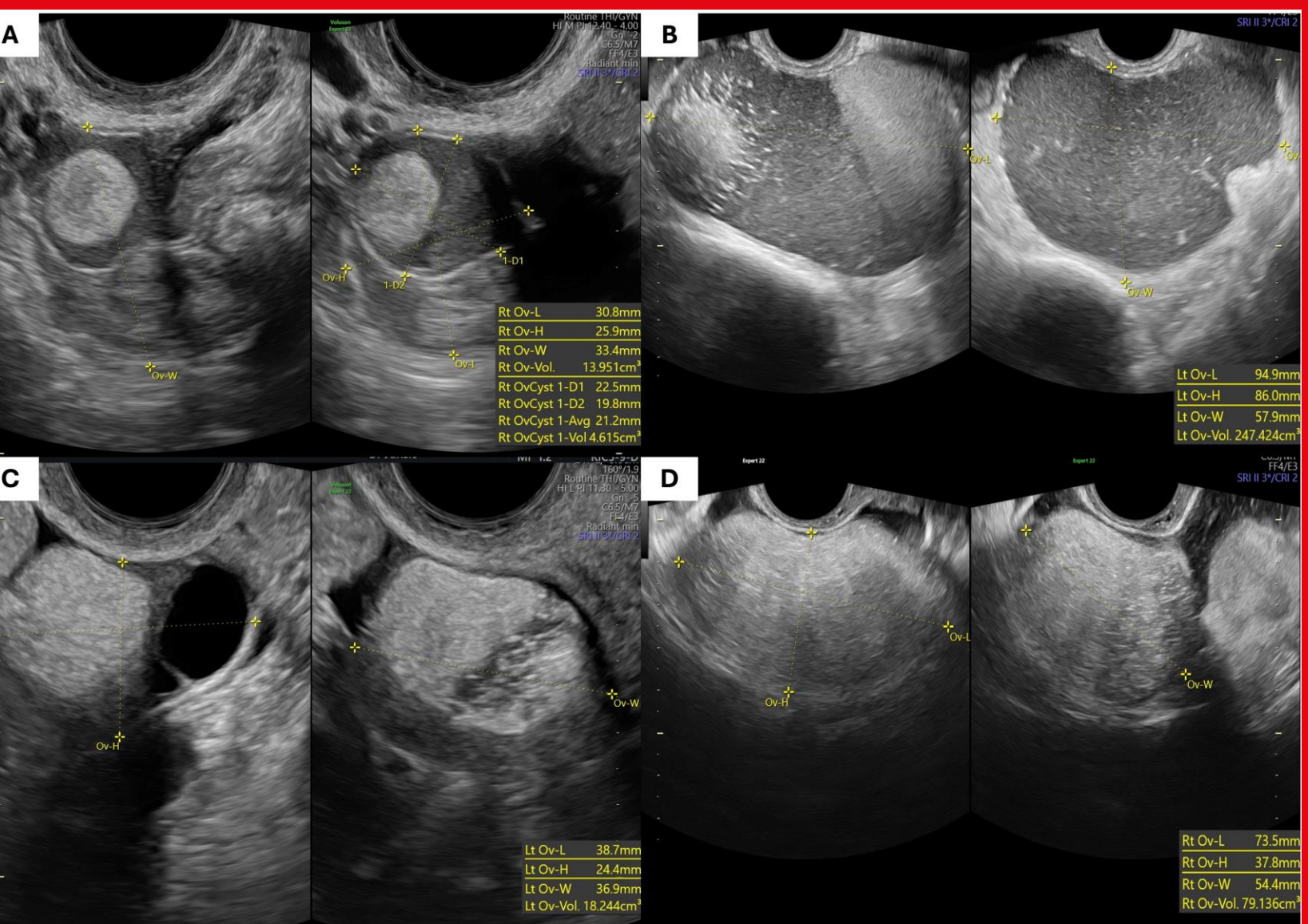


Figure 2. Ultrasonographic appearance of mature cystic teratomas.

(a and b) Multilocular-solid ovarian teratoma (arrows point to hyperechoic areas and solid tissue components, asterisks mark cystic components); (c) Multilocular-solid ovarian teratoma (arrows point to septations, asterisk indicates hyperechoic solid component); (d) Unilocular-solid ovarian teratoma (asterisk indicates hyperechoic solid component).

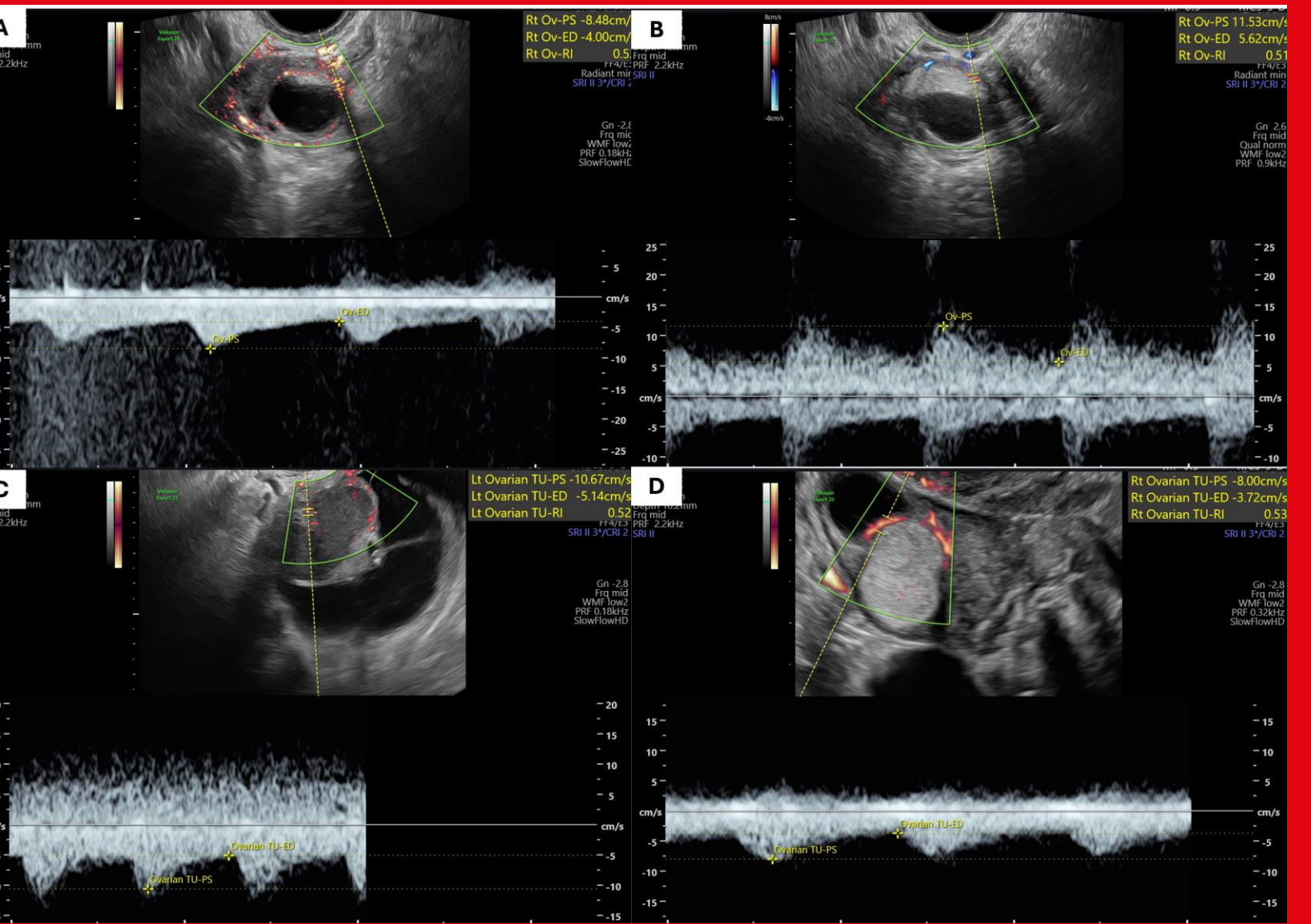


Figure 3. Blood vessel vascularization patterns.

(a, b) Pericystic vascularization in ovarian mature teratoma (arrows indicate pericystic blood vessels); (c) Vessels within the septum of an endometrioma (arrows point to vascular signals within the septum); (d) Vascular pattern in a multicomponent ovarian teratoma (white arrows highlight blood vessels within the septa, red arrow points to a vascular signal within the solid component).